

addition, a ventilation chamber is provided for venting moisture from the microwave chamber. A processing unit and associated memory allows means for data acquisition, processing and storage of data from the power module driving the magnetron, the microwave energy sensor(s) for sensing magnetic and/or electric fields and the electronic balance for weighing the initial and final weights of the specimen for loss on drying moisture analysis. Both signaling the removal of microwave energy in the chamber. -- after "microwave."

IN THE CLAIMS

Kindly cancel claims 1-19, 26-33, 38-43, 51-53, 56 and 57, without prejudice or disclaimer as to their contents.

The following claims are included herein for the Examiner's ease of review of this application. Specifically, the following claims reflect only those claims that remain in this case, after cancellation of those claims set forth immediately hereinabove. Undersigned respectfully advises that claims 20-25, 34-37, 44-50, 54 and 55, reproduced below, reflect those claims as originally filed in the parent application. No amendments have been made to the appended claims in this instant Preliminary Amendment.

Unamended Claims Reproduced:

Claim 20 - A method for loss on drying, the steps including:

- placing a specimen in a cylindrical microwave;
- monitoring the microwave energy within the cylindrical microwave while powering the microwave to dry the specimen;
- venting moisture from the microwave during a drying process.

Claim 21 - The method of claim 20 further including the step of subsequently decreasing the microwave power during drying process.

Claim 22 - A microwave moisture analyzer, comprising in combination:

a cylindrical microwave containment chamber;

said cylindrical microwave containment chamber including a pair of portals disposed therein;

a microwave energy source;

a wave guide operatively coupled between said microwave energy source and said portals for delivering microwave energy to said chamber;

means for supporting a sample within said chamber;

means for sensing microwave energy for controlling the amount of microwave energy delivered to said chamber as a function of the sample being analyzed.

Claim 23 - The microwave moisture analyzer of claim 22 further including a toploading electronic balance operatively disposed within said microwave chamber.

Claim 24 - The microwave moisture analyzer of claim 23 wherein said electronic balance is only actuated prior to and after the delivery of microwave energy to said chamber for determining an initial weight and a final weight of the sample.

Claim 25 - The microwave moisture analyzer of claim 24 further including means operatively coupled to said electronic balance for automatically determining sample moisture.

Claim 34 - A method for loss on drying, the steps including:

applying microwave energy to a sample having a known weight;

monitoring the microwave energy;

surceasing the applied microwave energy as a function of the monitored microwave energy.

Claim 35 - The method of claim 34 wherein the step of surceasing the microwave energy occurs when the monitored microwave energy has a signature correlative to a stabilized high value.

Claim 36 - The method of claim 35 further including the step of obtaining the final weight of the sample.

Claim 37 - The method of claim 36 further including the step of determining a moisture content of the sample as a function of the initial and final weights.

Claim 44 - A method for loss on drying, the steps including:

establishing an algorithm correlative to a change in radiation as function of load absorbability;

sensing radiation correlative to an absorbability of a load being radiated within a chamber;

comparing the sensed radiation to the algorithm for determining a benchmark correlative to an endpoint condition.

Claim 45 - The method of claim 44 further including the step of determining an initial weight of the load before being radiated.

Claim 46 - The method of claim 45 further including the step of determining a final weight of the load after the endpoint condition.

Claim 47 - The method of claim 46 further including the step of determining moisture content of the load.

Claim 48 - A method for loss on drying, the steps including:

establishing a characteristic radiation curve of a sample type correlative of its radiation absorbability;

radiating a specimen of the sample type;

developing a specimen radiation curve by monitoring a change in radiation correlative to radiation absorbability of the specimen;

comparing a transition of slope on the characteristic radiation curve with a transition of slope on the specimen radiation curve;

continuing to radiate the specimen until a predetermined endpoint condition has been met based on the comparison step.

Claim 49 - A method for loss on drying, the steps including:

establishing a benchmark correlative to a level of microwave energy sensed by a sensor;

employing the sensor to monitor a level of microwave energy within a chamber wherein a sample is being radiated;

comparing the monitored energy level with the benchmark level for controlling a drying process of the sample.

Claim 50 - A method for loss on drying, the steps including:

establishing a characteristic radiation curve of a sample type correlative of its radiation absorbability;

radiating a sample contained within a chamber;

comparing subsequently sensed levels of radiation within the chamber with the characteristic curve for determining an endpoint condition.

Claim 54 - The method of claim 20 wherein the monitoring step includes monitoring electric field strengths within the cylindrical microwave while powering the microwave to dry the specimen.

Claim 55- The method of claim 20 wherein the monitoring step includes monitoring magnetic field strengths within the cylindrical microwave while powering the microwave to dry the specimen.

Kindly Enter the New Claims as Follows:

Claim 58 - A method for loss on drying, the steps including:
placing a specimen in a cylindrical chamber;
monitoring changes in microwave energy within the cylindrical chamber while powering a magnetron to dry the specimen;
venting moisture from the microwave during drying.

Claim 59 - A microwave moisture analyzer, comprising in combination:
a cylindrical microwave containment chamber;
said cylindrical microwave containment chamber including a pair of portals disposed therein;
a microwave energy source;
a wave guide operatively coupled between said microwave energy source and said portals for delivering microwave energy to said chamber;
means for supporting a sample within said chamber;
means for sensing changes in microwave energy and means for controlling the amount of microwave energy delivered to said chamber as a function of the changes in the microwave energy being sensed.

Claim 60 - A method for loss on drying, the steps including:
applying microwave energy to a sample having a known weight;
monitoring changes in the microwave energy;
surceasing the applied microwave energy as a function of the changes in the monitored microwave energy.

Claim 61 - A method for loss on drying, the steps including:
establishing an algorithm correlative to a change in radiation as a function of load absorbability;
sensing stray radiation and its changes correlative to an absorbability of a load being radiated within a chamber;
comparing the sensed radiation to the algorithm for determining a benchmark correlative to an endpoint condition.

Claim 62 - A method for loss on drying, the steps including:
establishing a characteristic radiation curve of a sample type correlative of its radiation absorbability;
radiating a specimen of the sample type;
developing radiation curve for the specimen by monitoring a change in radiation correlative to radiation absorbability of the specimen;
comparing a transition on the characteristic radiation curve with a transition on the specimen radiation curve;
continuing to radiate the specimen until a predetermined endpoint condition has been met based on the comparison step.